Problems found during the installation of the “New Font Selection Scheme”

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This document was compiled by LaTeX users installing the New Font Selection Scheme for LaTeX. It describes problems found and outlines possible solutions.

If you run into problems and want to help others with your experiences we are happy to add your comments to this document. Please send in your problem (and if known a solution) in the format suitable for inclusion into this file and tell us whether or not you agree on including your mail address for individual contacts at the end of this file. Thanks.

Please note that we don't have the time to help everybody in adapting the New Font Selection Scheme to the special needs of their site. For the same reason we do not distribute it individually. It is only available from TeX organizations and servers.

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1 Insufficient poolsize

TF (91/01/02): While installing the "font selection scheme" from Mittelbach/Schöpf (together with the $\mathcal{AMS}$-Fonts), I detected several inaccurations which caused runtime errors under PCTEX(Ver. 2.93).
Using $\mathcal{AMS}$-Fonts the TEX-poolsize is exhausted soon, calling only a few math symbols. While PCTEX users aren't able to increase the poolsize in the WEB-File they have to patch the poolfile `tex.poo` (please make a backup before) which is to be found in the subdirectory `\pctex\texfmts`.
Normally this file has a structure like

```
nnhelpmessage follows here
```

each line, for example

```
28End of file on the terminal!
```

where `nn` defines the number of characters following. PCTEX users can increase their poolsize by changing the numeric value to `'00'` and filling the rest of the line with blanks. But be sure, that you only update lines which are indicated as help messages and leave the rest like

```
13m2d5c2l5x2v5i
```

untouched. You also shouldn't change the bottom line which looks like

```
*363303461
```

otherwise PCTEX will run in an infinite loop. The disadvantage of this operation – you won't see the erased help messages anymore. For this it is better to kill (and it will be enough) only the help messages you see when you type `h` during runtime.

Remark FMi (91/01/16): *This will help in an emergency. The AMS has contacted most vendors to ensure that the poolsize is generally enlarged. The same was done for public domain versions.*

2 Font magnification

TF (91/01/02): When calling the driver after running PCTEX you will find that the driver misses some fonts and uses substitutions which look quite strange.
This cause depends that PCTEX normally uses magnifications of 10pt-fonts for bigger sizes. To work around this error you can either generate the missing fonts with Metafont or make a personal copy and change of `fontdef.ori` where the fonts are defined.

Example: You are working with 11pt size, starting your TEX-file with

```
\documentstyle[11pt]{article}
```

and using the command `\Huge`. Invoking the driver he will tell you

```
Font cmr17 -- magnification 3572 not
found, using nearest neighbour
cmr17 mag 1643 instead
```

Looking in your personal copy of `fontdef.ori` you will find the sequence

```
%% And here is your playground:
%%
\new@fontshape{cmr}{m}{n}{%
      <5>cmr5%
      <6>cmr6%
      <7>cmr7%
      <8>cmr8%
      <9>cmr9%
      <10>cmr10%
      <11>cmr10 at10.95pt%
      <12>cmr12%
      <14>cmr12 at14.4pt%
      <17>cmr17%
      <20>cmr17 at20.736pt%
      <25>cmr10 at24.8832pt%
      }{}
```

For getting the original PCTEX magnifications defined in `lfonts.tex` you have to change the lines containing the definition of the ”wrong” font, for example

```
<20>cmr17 at20.736pt%
```

in

```
<20>cmr10 at20.736pt%
```

and re-iniTEX your LATEX-formatfile - this time using your personal copy of `fontdef.ori`. Afterwards the driver will run correctly.

Remark FMi (91/01/16): *If it is possible, you should use cmr17 at 20pt instead of cmr10 at 20pt since cmr17 was designed for a size (17pt) which is closer to the desired size (20pt). Even better: generate and distribute fonts designed for 20pt using, for example, the Sauter programs.*

3 Using the $\mathcal{AMS}$-LaTeX -package

TF (91/01/02): If you are using the `amssymb.sty`-file (containing only the definitions for the mathematical symbols and not the whole $\mathcal{AMS}$-LaTeX-stuff) maybe you will get an error message that the macros `\RifM@` and `\noaccents@` aren't defined.
In this case you probably work with version 1.0p of `amssymb.sty` (which is a not correct running testversion).
Although you can work around this bug by making a private copy of `amssymb.sty` and copying the definitions from `amstex.sty` which look like:

```
\def\RIfM@{\relax\protect\ifmmode}
\def\noaccents@{\def\accentclass@{0}}
```

you should better try to get version 1.0a of `amssymb.sty` which should run correctly.

Remark FMi (91/01/16): *Unfortunately the AMS decided to reset the version number of the files after they got installed on some servers. Most of the test versions had version numbers like v1.0m but the new distribution has now v1.0a. If you got the $\mathcal{AMS}$-LaTeX package with version numbers higher than, say, v1.0c then you got probably a pre-release version. This can also be determined by looking at the date recorded in the files.*

4 Font design sizes

BK (91/04/22): When using an 8pt-font (e.g. with design size 8pt) like cmssq8 in size 10pt, you cannot write

```
\new@fontshape{cmssq}{m}{n}{%
...
<10> cmssq8%
<11> cmssq8 at 10.95pt%
<12> cmssq8 at 12pt%
...
```

If you do so the font will in size 12pt (e.g. with `\large`) be scaled with magnification 1500 rather than 1200.
Solution: write

```
...
<12> cmssq8 at9.6pt%
...
```

or

```
...
<12> cmssq8 scaled 1200%
...
```

instead.

Remark RmS (91/04/24): *Keep in mind that you are totally free in what you specify in the* `\new@fontshape` *command; the New Font Selection Scheme will use the font exactly as you specify it. In the case at hand the mistake was to confuse the main size of the text ('12') with the size at which the font is to be loaded: since cmssq8 is an 8pt font that goes with 10pt text, an 9.6pt version should go with 12pt text.*

5 Default settings

EM (91/04/23): I just tried to make a LaTeX format file for the use of PostScript Fonts. These should be used via DVIPS and the font definitions should be done via the New Font Selection Scheme.
In principle this works very well, but I cannot manage the scheme to use times-roman rather than cmr10 right from the beginning. `\rmdefault` is set correctly, and everything works well if one starts the document with `\rm`. But it is not possible to write `\rm` during the IniTeX run since a lot of things are not yet defined.

Remark RmS (91/04/23): *At the time that* LaTeX *executes the* `\begin{document}` *command it uses the defaults set by*

```
\default@family
\default@series
\default@shape
```

These definitions can be found in the `fontdef` *files.*
The idea behind this is to define the global initialization by these parameters whereas things like `\rmdefault` *only determine the font used for* `\rm`*, etc. For example, it is possible to select fonts without serifs as a default by simply changing the definition of* `\default@family`*, but retaining the usual meaning of* `\rm`*, etc.*

6 The good guys and dolls

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